

## Carbon Capture Utilization and Storage:

### Turning CO2 into a Commodity to Maintain and Grow Jobs

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ENVIRONMENTAL QUALITY  
COUNCIL 2017-18

Mr. Chairman, Esteemed Members of the Committee, Good Afternoon. Sept. 12, 2018

Exhibit 25

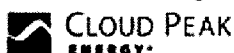
My name is Richard Reavey. I am Vice President Public Affairs for Cloud Peak Energy, one of the largest coal producers in Montana. I also serve as a Vice-Chairman of the Carbon Utilization Research Council, the only organization representing coal, oil and gas producers, utilities, labor organizations, and technology developers in advancing technology solutions to concerns about greenhouse gas emissions, a member of the Global CCS Institute, the premier global institution for advancing Carbon Capture and Storage, and an Associate Member of the Coal Industry Advisory Board to the International Energy Agency, a global industry advisory group very focused on advancing CCUS for the coal industry. I'd like to speak today about the challenges facing coal and what can be done to protect the communities, jobs, and revenues that depend on it.

Coal presents both opportunities and issues. On the one hand, coal is ideally suited as a fuel for electricity generation. It is a low cost fuel, with Powder River Basin sub-bituminous coal very competitive with domestic natural gas, and very viable with East Asian utilities, where coal will fuel electricity demand growth for decades to come, according to the IEA. It provides substantial grid security and resiliency, allowing secure on-site stockpiling of several months inventory. It underpins entire regional economies and communities. It also generates about 40% more CO2 per million BTU than natural gas when used in electricity generation with currently applied technology.

In survey after survey, over two thirds of Americans express concern about climate change. A majority of those two thirds believe that greenhouse gas emissions, such as CO2 and Methane, play a role in climate change. Therefore, coal and natural gas, which today provide nearly two thirds of electricity in the US and drive our competitive advantage in reliable, affordable energy, present concerns with CO2 and, for natural gas, also with Methane emissions.

Coal powered Electricity Generating Units (EGUs) that survived the Obama Administration's efforts to destroy the industry are equipped with a wide array of pollution controls such that they emit two things – the same two things that everyone in this room emits: steam and CO2. The regulation of CO2 emissions represents a two-fold challenge to Montana. On the one hand, coal severance taxes alone have delivered over \$2.1 billion to Montana since their imposition in 1975, on top of local taxes and federal revenue sharing from billions in royalties. The loss of coal revenues to the state would be devastating. Further, the Colstrip power plant and its community are at risk as West Coast electricity customers pursue efforts to eliminate greenhouse gas emissions from their energy supply.

Uncertainty around the regulation of CO2 remains an enormous threat to coal jobs, regional economies, and government revenues from coal. Two years after the end of the Obama Regime's weaponization of the federal government to kill coal, after President Trump declared an end to the War on Coal, and even now with the illegal Clean Power Plan likely to be replaced



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by a more sensible Affordable Clean Energy (ACE) rule that recognizes the primacy of state regulation and encourages efficiency upgrades to coal fired power plants, utilities continue to close coal EGUs before the end of their planned lifetimes. In the past year alone, 17 power plants that have been supplied with Powder River Basin coal have closed, most of them well before their planned obsolescence. Only two weeks ago, the Colorado Public Utilities Commission approved closure of two coal units at the Comanche facility more than a decade before their planned obsolescence. In a recent news article in the *Washington Examiner*, not one utility contacted after issuance of the new ACE rule said it had any plans to invest in existing coal assets or change planned closures, let alone build a new coal fired power plant.

In 2013, Cloud Peak Energy shipped over 86 million tons of coal from its three PRB mines. Last year, we shipped just over 57 million tons – a 30% decline over five years. During that same period, over 300 coal power plants were shut down. Since 2010, nearly 40% of the national coal generating capacity has been closed. Although deemed illegal, or stayed by the courts, Obama era rules like the Mercury Air Toxicity Standard or the now rescinded Clean Power Plan threatened utilities with enormous cost increases on aging infrastructure, or years of litigation.

In Montana, this problem is best exemplified by Northwest Energy's purchase of 11 PPL hydroelectric dams in 2013, coincident with the release of the Obama Clean Power Plan. At the time of purchase, Northwest chose not to acquire any of PPL's interests in coal EGUs in Montana, with CEO Bob Rowe noting the hydroelectric assets "give us an opportunity to diversify our portfolio, and is very helpful in terms of there being no fuel risk, and no going-forward environmental risk in terms of what (federal environmental regulators) might do."

Another major US merchant utility CEO was recently heard at an energy conference saying that "This industry used to be about chasing the lowest cost fuel. Now it's about chasing the highest yield subsidy." Uncertainty about the future of emissions regulation, combined with \$6 billion a year in federal subsidies alone for wind and solar, plus Renewable Portfolio Standards, and other mandates, are driving investment decisions, especially for merchant utilities. In a flat to low demand growth electricity market, retiring coal assets early, getting utility regulators and watchdogs to allow cost plus recoupment on building wind and solar generation, whether needed or not, and then using the tax credits they generate to keep more of the profits is a lucrative model for merchant utilities.

Congress' unwillingness to amend the Clean Air Act and create long-term regulatory certainty on emissions regulation for utilities means that the CO2 problem will continue and it will threaten jobs, economies, and revenues in Montana.

The solution to the CO2 problem has existed since at least the 1930's: technology that strips out CO2 from a power plant's exhaust emissions and returns it to the ground, known as Carbon Capture Utilization and Storage (CCUS). And to both our north, in Canada's Saskatchewan Province, and to our south at the NRG Petra Nova plant in Texas, commercial power plants are operating with this technology. At both these plants, CO2 is separated from the power plant



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exhaust, purified, compressed, and pumped to nearby oil fields where it is injected into exhausted wells that are thereby made productive again in a process known as Enhanced Oil Recovery. The CO2 is then stored securely underground in the oil fields – effectively recycled. The operator of the carbon capture unit is paid somewhere around \$25 - \$30 per ton of CO2 by oil field operators. In the US, the carbon capture operator is also eligible for a transferrable 45Q tax credit of up to \$35 per ton.

In addition to protecting coal and utility jobs and revenues, CCUS deployment may create new jobs and revenues. Recent reports on Wyoming and the greater Permian Basin in Texas suggest that the capture and the beneficial use of CO2 from power plants and industrial sources could create tens of thousands of jobs, add tens of millions of dollars in tax revenues, and create US technology leadership and export opportunities in carbon capture technology, as well as boosting US oil production, and related government revenues, and reviving stranded assets.

According to the Bureau of Labor Statistics, the average coal mining job in the US pays \$83,000 a year while the average solar panel installation job pays \$38,000 a year. Climate policy today is designed to convert \$83,000 a year jobs into \$38,000 a year jobs, to forego billions of dollars a year in tax revenue, and pursue CO2 emissions reductions in the least cost effective way possible. In fact, the UN Intergovernmental Panel on Climate Change, the source of the frequently cited “overwhelming scientific consensus on climate change”, says that achieving “climate stabilization goals” without the aggressive deployment of CCUS technology will be 138% more expensive – or cost an additional 5% of global GDP through the end of the century.

If the goal of energy and climate policy is to maximize jobs, revenues, energy reliability and affordability, all while addressing Americans’ legitimate concerns about CO2 and climate, then a substantial policy shift to promote and encourage development and deployment of CCUS is required. While Congress remains inactive on creating long term regulatory certainty for emissions, there are things that state legislatures can do to promote CCUS as part of the solution. Regulatory and tax incentives for CCUS deployment and recognition of CCUS generated electricity as qualifying with Renewables Portfolio Standards, that should really be Low Carbon Emissions Standards, are among them. Any policy promotion for CCUS is an investment in maintaining the regional economies, communities, and high paying jobs that coal provides the state, as well as maintaining a very significant revenue stream.

Mr. Chairman, I hope this conclusion provides useful information to the legislature and will answer any questions that I can today or find answers if I cannot do so today. Thank you for your time and consideration of this important issue.



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